

CHAPTER 10

COMBAT SUPPORT

For a unit to achieve its full combat potential, the commander must understand command and support relationships and effectively integrate all available combat support assets. This chapter focuses on the CS elements with which the antiarmor company is most likely to work: fire support, intelligence, and maneuver support. The SBCT antiarmor company commander must not only understand combat support but also the nuances of having assigned CS assets within the SBCT.

Section I. COMMAND AND SUPPORT RELATIONSHIPS

The company commander must understand the command or support relationships established between his company and other units. Command relationships define command responsibility and authority. Support relationships define the purpose, scope, and effect desired when one capability supports another. For more detailed information, see FM 5-0 (101-5).

10-1. COMMAND RELATIONSHIPS

Command responsibility and authority are established routinely through the following standard relationships:

a. **Assigned.** This is a unit that is placed in an organization on a relatively permanent basis and is controlled and administered by the organization to which it is assigned for its primary function.

b. **Attached.** This is the temporary placement of units or personnel in an organization. The attached unit is under the command of the commander of the unit to which it is attached.

(1) The commander exercises the same degree of command and control as with his assigned units.

(2) Attachments are subject to limitations specified by the commander who directed the attachment. This relationship includes the responsibility for operations CSS, Uniform Code of Military Justice (UCMJ), and training. (The parent unit retains the responsibility for transfer and promotion of personnel.) It does, however, impose an administrative and logistical burden on the unit to which the attachment is made.

c. **Operational Control.** This relationship places a unit under the control of a commander for specific operations. The relationship is limited by function, time, or location. OPCON allows a commander to organize and employ the OPCON unit, assign tasks, designate objectives, and give authoritative direction necessary to accomplish the mission; however, OPCON does not include responsibility for administration, logistics, discipline, internal organization, or training.

10-2. SUPPORT RELATIONSHIPS

Where command relationships define command responsibility and authority, support relationships define the purpose, scope, and effect desired when one capability supports another. Support relationships establish specific responsibilities between supporting and supported units. The commander's relationship with supporting units is as follows:

- He ensures that the supporting unit establishes liaison and communications with his unit.
- He keeps the supporting unit informed of the situation and the support needed.
- The supporting unit leader advises him of the employment considerations.

Requests to a supporting unit for support are honored as an order. In case of a conflict, the supporting unit leader refers the matter to his parent unit commander. The request or order in question, however, will be honored until the conflict is resolved. The supporting relationships most commonly encountered by antiarmor units include direct support and general support.

a. **Direct Support.** Direct support is when one unit, under command of its parent unit commander, supports another specific unit. The supporting unit answers directly to the supported unit's requests. The commander may not suballocate, reassign, or task-organize the force supporting him. The DS unit still has a command relationship with its parent organization, but the supported unit has positioning authority and establishes the priorities of support.

b. **General Support.** Organizations providing general support (GS) to a unit are under control of their parent unit commander. They support the unit as a whole, not any specific element. The commander must request support from a GS unit through his controlling headquarters. The GS unit's parent organization retains positioning authority and establishes the priorities of support.

Section II. FIRE SUPPORT

Fire support (FS) consists of the fires and effects that directly support maneuver forces to engage enemy forces, combat formations, and facilities in support of operational and tactical objectives.

NOTE: The term "fire support" is used to address both "fire support" and "fires and effects." The acronym FSO will be used to refer to the SBCT antiarmor company FSO and the battalion FSO in the light, airborne, and air assault infantry battalions.

10-3. FIRE SUPPORT CONSIDERATIONS.

Artillery, and in some cases tactical aircraft and or attack helicopters supporting the brigade or battalion, responds to calls for fire based on the priority of fire.

a. The FSO or company commander, in coordination with the plans developed by the brigade or battalion commander or S3s, plans artillery fire to support the concept of the operation. The integration of indirect fires is critical to the success of the unit. The effects of these fires on an enemy force are much greater than the effects of the unit's organic weapons. Artillery and mortars provide the most destructive, accurate, and flexible combat multiplier the commander (or platoon leader) has to employ. Table 10-1 lists the capabilities of the indirect fire systems that may support the unit.

CALIBER:	60-mm	81-mm	81-mm (improved)	120-mm	105-mm	105-mm	155-mm
MODEL:	M224	M29A1	M252	M285	M119	M198	M109A6
MAX RANGE (HE)(m):	3,490	4,595	5,608	7,200	14,000	18,100	18,100
PLANNING RANGE (m):					11,500	14,600	14,600
PROJECTILE:	HE, WP, ILLUM,	HE, WP, ILLUM,	HE, WP, ILLUM, RP	HE, SMK, ILLUM,	HE M760 ILLUM, HEP-T, APICM, CHEM, RAP	HE, WP, ILLUM, SMK, CHEM, NUC, RAP, FASCAM, CPHD, AP/ DPICM	HE, WP, ILLUM, SMK, CHEM, NUC, RAP, FASCAM, CPHD, AP/ DPICM
MAX RATE OF FIRE:	30 RPM FOR 1 MIN	30 RPM FOR 1 MIN	30 RPM FOR 2 MIN	15 RPM FOR 3 MIN	6 RPM FOR 1 MIN	4 RPM FOR 1 MIN	4 RPM FOR 1 MIN
SUSTAINED RATE OF FIRE (rd/min):	20	8	15	5	3	2	2
MINIMUM RANGE (m):	70	70	83	180	DIRECT FIRE		
FUZES:	MO	PD, VT, TIME, DLY	PD, VT, TIME, DLY	MO	PD, VT, MTSQ, CP, MT, DLY	PD, VT, CP, MT, MTSQ, DLY	PD, VT, CP, MT, MTSQ, DLY
LEGEND: AP - Armor Piercing APICM – Antipersonnel Improved Conventional Munitions CHEM – Chemical CP - Concrete Piercing CPHD – Copperhead DLY – Delay DPICM - Dual Purpose Improved Conventional Munitions FASCAM - Family of Scatterable Mines HE - High Explosive HEP-T - High Explosive Plastic Tracer ILLUM – Illumination MIN – Minute MO - Multioption - VT, PD, DLY MT - Mechanical Time MTSQ - Mechanical Time Super Quick NUC - Nuclear PD - Point Detonating RAP - Rocket Assisted Projectile RD - Round RP - Red Phosphorus RPM - Rounds per Minute SMK - Smoke TIME - Adjustable Time Delay VT - Variable Time WP - White Phosphorus							

Table 10-1. Indirect-fire capabilities.

b. Field artillery can fire a variety of ammunition, including high explosive, illumination, and white phosphorous ammunitions. The 155-mm units can also fire dual-purpose improved conventional munitions (DPICMs) and scatterable mines. The DPICM is a lethal antipersonnel and antiarmor munition containing bomblets that are dispersed over a wide area because they are ejected high above the target during the flight of the projectile. The bomblets can penetrate up to 4.5 inches of armor. Families of scatterable mines rounds (FASCAM) contain a number of mines with self-destruct features that are set to detonate at specific times (Table 10-2, page 10-4). The rounds may contain either antipersonnel or antiarmor mines that arm shortly after impact. Companies do not normally plan or employ FASCAM, but the company commander should be familiar with these weapons (for more information see FM 7-20).

0TYPE OF MINE	ARMING TIME	SELF-DESTRUCT TIMES
Adam (AP)	2 minutes	4 hours or 48 hours
RAAM (AT)	45 seconds	4 hours or 48 hours
GEMSS	45 minutes	5 days or 15 days
MOPMS	2 minutes	4 hours
Gator/Volcano	2 minutes	48 hours or 15 days

Table 10-2. FASCAM arming and self-destruct times.

c. Artillery fire and mortars can be combined to cover targets. For example, mortars can fire illumination while artillery fires high explosives or DPICMs. The company commander must ensure his company employs each system (mortars, artillery, and direct fire) when and where it has the greatest effect on the enemy.

10-4. FIRE SUPPORT PLANNING

Fire support planning is conducted concurrently with maneuver planning at all levels. Battalions and brigades typically use top-down fire support planning, with bottom-up refinement of the plans.

- The commander develops guidance for fire support in terms of tasks and purposes.
- The fire support planner determines the method to be used in accomplishing each task; he also specifies an end state that quantifies task accomplishment.
- The fire support planner determines the method to be used in accomplishing each task.
- Individual units then incorporate assigned tasks into their fire support plans.

In addition, units tasked to initiate fires must refine and rehearse their assigned tasks. This means that the company commander refines his unit's assigned portion of the brigade or battalion's fire support plan to ensure that the designated targets will achieve the intended purpose. He also conducts rehearsals to prepare for the mission and, as specified in the plan, directs the company to execute its assigned targets.

a. Essential Fire Support Task Planning. The brigade and battalion employ effects-based fires to set the conditions for its operations. The objective of effects-based fires is to apply a desired effect to achieve a specified purpose in time and space by servicing targets as acquired. This approach develops an essential fire support task to focus full spectrum effects against a high-payoff target within the designated area of operation. An EFST is defined as the application of fires required to support a course of action; failure of the fire support unit to achieve an EFST may require a maneuver commander to alter his tactical plan. A complete EFST consists of a task, purpose, method, and effects.

- The *task* is the effect (what) desired to apply against the target (for example, suppress and obscure the enemy on hill 197).

- The *purpose* (why) is the combined arms outcome desired as a result of applying the effect (for example, enable the breach force to reduce the obstacle and establish far side security).
- The *method* (how) consists of acquisition and tracking, delivery of effects (lethal and nonlethal), and restrictions.
- *Effects* are essential to determine (quantify or qualify) if the desired effect was created and the purpose was achieved.

In order for the FSO to meet the challenges of achieving the EFST, he must ensure that full spectrum effects are produced through the integrated and synchronized application of lethal and nonlethal capabilities. This method is the continuous process of planning, integrating, and orchestrating full spectrum fire support in support of the combined arms operation to enable the achievement of the commander's desired end state. The application of fire support must be fully nested within the unit's concept of the operation. During the execution of the tactical plan, digitization of information is essential to provide responsive and precise effects and serves as a cornerstone of effects-based fires. A prime example is the integration of digital enemy locations with the digital call for fire to produce effective rounds on the enemy in the shortest amount of time possible.

b. **Linking Tasks and Maneuver Purpose.** A clearly defined maneuver purpose enables the maneuver commander to articulate precisely how he wants fire support to affect the enemy during different portions of the battle. This in turn allows fire support planners to develop a fire support plan that effectively supports the intended purpose. They can determine each required task (in terms of effects on target), the best method for accomplishing each task (in terms of a fire support asset and its fire capabilities), and a means of quantifying accomplishment. A carefully developed method of fire is equally valuable during execution of the fire mission; it assists not only the firing elements but also the observers who are responsible for monitoring the effects of the indirect fires. With a clear understanding of the intended target effects, fire support assets and observers can work together effectively, planning and adjusting the fires as necessary to achieve the desired effects on the enemy. The following paragraphs describe several types of targeting objectives associated with fire support tasks and provide examples of how the company commander might link a target task to a specific maneuver purpose in his order.

(1) **Delay.** The friendly force uses indirect fires to cause a particular function or action to occur later than the enemy desires. For example, "Delay the repositioning of the enemy's antitank reserve, allowing Team B to consolidate on OBJECTIVE BOB."

(2) **Disrupt.** Disrupting fires are employed to break apart the enemy's formation, to interrupt his tempo and operational timetable, to cause premature commitment of his forces, or to otherwise force him to stage his attack piecemeal. For example: "Disrupt the easternmost first-echelon MRB to prevent the enemy from massing two MRBs against Company B and Company D."

(3) **Limit.** Indirect fires are used to prevent an action or function from being executed where the enemy wants it to occur. For example: "Limit the ability of the enemy's advance guard to establish a firing line on the ridge line to the flank of the battalion axis of advance to prevent the enemy from fixing the battalion main body."

(4) **Divert.** Diverting fires are employed to cause the enemy to modify his course or route of attack. For example: "Divert the enemy's combined arms reserve counterattack to EA DOG to facilitate its destruction by Company D."

(5) **Screen.** Screening fires entail the use of smoke to mask friendly installations, positions, or maneuver. They are normally conducted for a specified event or a specified period of time. For example: "Screen the movement of the counterattack force along ROUTE RED to ABF 21 to prevent the remnants of the enemy MRB from engaging the company."

(6) **Obscure.** Smoke is placed between enemy forces and friendly forces or directly on enemy positions, with the purpose of confusing and disorienting the enemy's direct fire gunners and artillery forward observers. Obscuration fires are normally conducted for a specified event or a specified period of time. For example: "Obscure the northernmost enemy strongpoint to allow A company to breach."

NOTE: The supported commander may also designate purposes for special munitions such as area denial artillery munition (ADAM) and remote antiarmor munition (RAAM), Copperhead, or illumination rounds.

c. **Final Protective Fire Planning.** A final protective fire is designed to create a final barrier, or "steel curtain," to prevent a dismounted enemy from moving across defensive lines. FPFs are fires of last resort; as such, they take priority over all other fires, to include priority targets. The employment of an FPF presents several potential problems. They are linear fires, with coverage dependent on the firing sheaf of the fire support asset(s). In addition, while an FPF may create a barrier against penetration by enemy infantry, armored vehicles may simply button up and move through the fires into the friendly defensive position. FPFs are planned targets and thus must have a clearly defined purpose (see paragraph 10-8).

d. **Target Refinement.** The company commander (or platoon leader) is responsible for the employment of indirect fires in his area of operation (zone or sector). The most critical aspect of this responsibility is target refinement, in which he makes necessary changes to the fire support plan to ensure that targets accomplish the infantry battalion or SBCT commander's intended battlefield purpose. Rather than merely executing targets without regard to the actual enemy situation, the company commander (or platoon leader) and FSO must be ready to adjust existing targets or to nominate new targets that allow engagement of specific enemy forces.

(1) Necessary refinements usually emerge when the company commander (or platoon leader) conducts course of action analysis (war-gaming) as part of step 6 (complete the plan) of troop-leading procedures (see Chapter 2). The war-gaming process allows him to identify required additions, deletions, and adjustments to the higher unit's fire support plan. The FSO then submits the refinements to the higher headquarters fire support element (FSE) for inclusion in the scheme of fires for the operation. The light infantry battalion antiarmor platoon leader will coordinate all of this directly with the FSE or with the company commander to whom his platoon is attached or OPCON.

NOTE: This is normally only the first step of target refinement, with the commander, platoon leader, and FSO making further adjustments as the enemy situation becomes clearer.

(2) As a specific requirement in defensive planning, the company commander must focus on target refinement for his area of operation. This usually takes place as part of engagement area development. The commander makes appropriate adjustments to the targets based on refinements to the SITEMP, such as the actual positions of obstacles and enemy direct fire systems. The light infantry battalion antiarmor platoon leader will most likely coordinate this through the company commander to whom his platoon is attached or OPCON.

(3) Because fire support is planned from the top down, cutoff times for target nomination and target refinement are normally specified in the higher unit OPORD. Nominations and refinements must meet these deadlines to provide fire support planners with sufficient time to develop execution plans.

e. **Fire Support Preparation.** As noted, although the SBCT and battalion commanders establish target tasks and purposes and allocate appropriate fire support assets, the company commander (or platoon leader) is the one who must ensure execution of assigned targets. In turn, successful execution demands thorough preparation, focusing on areas covered in the following paragraphs.

(1) **Observation Plan.** In developing the observation plan, the commander (or platoon leader) must ensure that both primary and alternate observers cover all targets. The plan must provide clear, precise guidance for the observers. Perhaps the most important aspect of the plan is positioning; observers' positions must allow them to see the trigger for initiating fires as well as the target area and the enemy force on which the target is oriented. The commander (or platoon leader) must also consider other aspects of observer capabilities, including available equipment. For example, the ground/vehicle laser locator designator (G/VLLD) provides first-round fire-for-effect capability; without it, observers may have to use adjust-fire techniques that take longer and are more difficult to implement. The observation plan must also include contingency plans that cover limited visibility conditions and backup communications. (See paragraph 10-10.)

NOTE: In addition to providing the specific guidance outlined in the observation plan, the commander (or platoon leader) must ensure that each observer understands the target task and purpose for which they are responsible. For example, observers must understand that once the first round impacts, the original target location is of no consequence; rather, they must orient on the targeted enemy force to ensure that fires achieve the intended battlefield purpose.

(2) **Rehearsals.** The company commander is responsible for involving the FSO in company- and higher-level rehearsals, for making the company available for any separate fire support rehearsals, and for rehearsing the company's observers in the execution of targets. He should also use rehearsals to ensure that the company's primary and backup communications systems will adequately support the plan. The light infantry battalion antiarmor platoon leader and selected subordinates will participate in higher-level fire support rehearsals. The platoon should incorporate fire support tasks within its own rehearsal. (See paragraph 10-11.)

(3) **Target Adjustment.** In the defense, the commander should confirm target location by adjusting fires as part of engagement area development.

(4) **Trigger Planning.** The company commander (or platoon leader) develops a trigger for each target. The trigger can be a point on the ground, such as an easily recognizable terrain feature, an emplaced marker, or a designated linear control measure. In the defense, triggers should be physically marked on the ground or their location specifically selected and identified during the development of the engagement area.

NOTE: Triggers can be marked using techniques similar to those for marking TRPs.

(a) The trigger line or point must be tied to clearly understood engagement criteria associated with the targeted enemy force. As an example, the company commander might use the following order to begin indirect fires: "Initiate target AE0001 when approximately 30 BMPs and 10 T-80s cross PL ORANGE."

(b) Several factors govern the positioning of the trigger. The enemy's rate of march and the resulting time required for the enemy force to move from the trigger to the target area are especially critical factors. Using this information, the commander (or platoon leader) can then select the trigger location based on the following considerations:

- The amount of time required to make the call for fire.
- The time needed by the fire support element to prepare for and fire the mission.
- The time required for the higher headquarters to clear the fires.
- Any built-in or planned delays in the firing sequence.
- The time of flight of the indirect fire rounds.
- Possible adjustment times.

The company commander (or platoon leader) can use the information in Tables 10-3 and 10-4 as a guide to determine the trigger location in relation to the target area. Table 10-3 lists the time required for the enemy force to move a specified distance at a specified rate of march. Table 10-4 lists the response time required by field artillery assets to prepare for and fire various types of support missions.

	DISTANCE TRAVELED									
RATE OF MARCH	1 km	2 km	3 km	4 km	5 km	6 km	7 km	8 km	9 km	10 km
60 km/hr	1	2	3	4	5	6	7	8	9	10
50 km/hr	1.2	2.4	3.6	4.8	6	7.2	8.4	9.6	10.8	12
40 km/hr	1.5	3	4.5	6	7.5	9	10.5	12	13.5	15
30 km/hr	2	4	6	8	10	12	14	16	18	20
25 km/hr	2.4	4.8	7.2	9.6	12	14.4	16.8	19.2	21.6	24
20 km/hr	3	6	9	12	15	18	21	24	27	30
15 km/hr	4	8	12	16	20	24	28	32	36	40
10 km/hr	6	12	18	24	30	36	42	48	54	60
5 km/hr	12	24	36	48	60	72	84	96	108	120

Table 10-3. Time (in minutes) required to travel a specified distance.

GRID OR POLAR MISSION (UNPLANNED)	5-7 minutes
PREPLANNED MISSION	3 minutes
PREPLANNED PRIORITY MISSION	1-2 minutes
NOTE: These are approximate times needed to process and execute calls for fire on normal artillery targets. Special missions may take longer.	

Table 10-4. Artillery response times (in minutes).

(5) **Shifting Fires.** As in trigger planning for the initiation of fires, the commander must establish triggers for shifting fires based on battlefield events such as the movement of enemy or friendly forces. One technique is the use of a minimum safe line (MSL) when a friendly element, such as a breach force, is moving toward an area of indirect fires. As the element approaches the MSL, observers call for fires to be shifted, allowing the friendly force to move safely in the danger area.

(6) **Clearance of Fires.** The maneuver commander has the final authority to approve (clear) fires and their effects within his AO. Although he may delegate authority to coordinate and clear fires to an FSO, the ultimate responsibility belongs to the company commander. An FSO may assist the commander by making recommendations on the clearance of fires.

(7) **Fire Support Execution Matrix.** As a tool in fire support planning and execution, the company commander (or platoon leader) may develop a graphic summary outlining the critical elements of the fire support plan and the unit's role in it. The commander (or platoon leader) may incorporate this information into his own execution matrix or into a separate fire support execution matrix, similar to the battalion's fire support execution matrix, as illustrated in Table 10-5, page 10-10. The company fire support execution matrix is similar and should include, as a minimum, the following information for each target:

- Target number and type, to include FPF designation.
- Allocated fire support assets and munitions type.
- Observer and backup observer.
- Trigger.
- Target purpose.
- Target grid.
- Priority of fire.
- Priority targets.
- Fire support coordination measures (FSCMs).

EVENT SUPPORT DATA	EVENT I (LD to SBF 01)	EVENT II (Set conditions for breach from SBF 01)	EVENT III (B Company breach)	EVENT IV (C Company assault)
TARGET/ GRID	AE0001 (PK 10184938).	AE0002 (PK 09005031).	O/O shift AE0001 to AE0003 (PK 10204810) and lift AE0002.	O/O lift AE0003.
ASSET	155-mm HE.	Mortar smoke.	155-mm.	155-mm.
OBSERVER/ BACKUP	Recon platoon will initially call for and adjust fires; FSO adjusts upon arrival at SBF; 1st platoon leader is backup.	FSO (primary)/ 1st platoon leader (backup).	AE0003: FSO (primary)/ 2d platoon leader (backup).	FSO (primary)/ 3d platoon leader (backup).
TRIGGER	C Company crosses PL LYNX.	On-call at SBF.	B Company crosses PL LION.	C Company completes consolidation on OBJ BOB.
PURPOSE	Disrupt enemy on OBJ BOB to facilitate maneuver of A Company to SBF position.	Obscure enemy to prevent interference with B Company's breach.	Disrupt MRB reserve to protect the assault force (C Company).	Protect the assault force (C Company).

Table 10-5. Example battalion fire support execution matrix.

10-5. MANEUVER COMMANDER'S INTENT

The company commander must ensure the FSO clearly understands the intent for maneuver and fires support. He identifies the role of fire support in the scheme of maneuver (when, where, what, and why) by explaining to the FSO in detail the concept of the operation, scheme of maneuver, and tasks for fire support.

a. Providing this level of guidance is not easy. Artillery fires are not instantaneous, and planning must allow for this lag time. It takes three to seven minutes to process targets of opportunity. While war-gaming the maneuver, the company commander (or platoon leader) refines the critical targets or EAs, priority of targets, priority of engagement, sequence of fires, and results desired. Then he can see when and how to synchronize direct and indirect fires to destroy the enemy and protect the force.

b. The company commander (or platoon leader) normally establishes a priority of fires for his unit. This prioritizes requests when two or more units call for fires at the same time. He also designates where to place obscuration or illumination, suppressive fires, and preparation fires.

10-6. PLANNING PROCESS

While the company commander develops and refines the tactical plan, the FSO concurrently develops and refines the fire support portion of that plan. The FSO does not wait for the commander to complete the scheme of maneuver. He builds the fire plan using deliberate or quick fire support planning, depending on the time available. The light infantry battalion antiarmor platoon leader works concurrently with the battalion FSO or FSE, if not attached to an infantry company. Targets must be placed in the fire support planning channels as soon as possible so they can be processed at the battalion FSE or battery fire direction center (FDC). The unit's fire support plan must include:

- Target number and location.
- A description of the expected target.
- Primary and alternate persons responsible for shooting each target.
- The effect required (destroy, suppress, neutralize) and purpose.
- Radio frequency and call sign to use in requesting fires.
- When to engage the target.
- Priority of fires and shifting of priority.
- Size, location, code word, and emergency signal to begin FPF.
- Other information may be included as necessary or appropriate.

a. The battalion FSO or the company FSO (if available) does most of the company (or platoon) fire support planning; however, the FSOs may receive targets and target information from platoon leaders and the brigade fire support coordinator (FSCOORD) (or SBCT effects coordinator [ECOORD]). The company commander, platoon leader, or FSO should not plan too many targets.

(1) The number of targets planned by the unit and included in the formal fire support plan depends upon the unit's priority for fire support and the number of targets allocated to them. The total number of targets in the brigade fire support plan or the battalion mortar plan may be constrained. An excessive number of targets tends to dilute the focus of fire planning and can lead to increases in response time.

(2) Informal planning continues with target locations being recorded on terrain sketches or the FSO's map or being stored in the buffer group of the advanced field artillery tactical data system (AFATDS) for quick reference and transmission. Fire planning for the company mortars should complement these plans; the primary constraint is normally ammunition availability and rapid resupply ability. Care must be taken to ensure that planning focuses on the critical fire support requirements identified by the company commander.

b. The FSO completes the indirect fire plan and briefs the company commander. The company commander may alter the plan or approve it as is; he makes the final decision. After the company commander approves the plan, the FSO makes sure the targets are passed to the battalion FSE where the fire plans are integrated into the battalion scheme of maneuver.

c. The company commander, through his FSO, ensures platoon leaders are thoroughly familiar with the indirect fire plan. He also provides target overlays to the platoon leaders, any designated observers, and the commander. The company commander also may disseminate the company fire support plan as a target list and a fire support execution matrix. He does so in sufficient time to allow subordinates to brief their platoons and sections. (A good plan given with the company order is better than a perfect plan handed out at the line of departure.)

d. Battalion fire support plans (or SBCT fires and effects plans) may be distributed in matrix format. The fire support execution matrix is a concise, effective tool showing the many factors of a detailed plan. It may aid the commander, platoon leader, and FSO in understanding how the indirect fire plan supports the scheme of maneuver. It explains what aspects of the fire support plan each element is responsible for and at what time during the battle these aspects apply.

e. The advantage of the matrix is that it reduces the plan to one page and simplifies it. The company fire support execution matrix (Figure 10-1, page 10-13) also directs

execution responsibilities and reduces the possibility that planned fires will not be executed. Dissemination of the fire plan is the responsibility of the company commander (or platoon leader). The commander and his key subordinate leaders must understand the categories of targets and how to engage those targets to create the desired result.

f. Figure 10-1 is an example of a completed fire support execution matrix for a company deliberate attack. In the assembly area (AA), a field artillery FPF is allocated for 1st and 2d platoons; 3d platoon has been allocated a mortar FPF; 2d platoon has priority of mortar fires from the LD to Checkpoint 7. From Checkpoint 7 to Objective Green, 3d platoon has been allocated a mortar priority target and has designated it as CA3017; 2d platoon is backup for execution. 1st platoon has been allocated a mortar FPF; 2d and 3d platoons have been allocated field artillery FPFs. At company level, information in each box of the matrix includes the following:

(1) Priorities of indirect fire support to a platoon appear in the upper left corner of the appropriate box (FA). A technique is to prioritize all of the subordinate units to ensure there is an understanding when conflicts arise among all of the platoons.

(2) If a unit is allocated an FPF, the type of indirect fire means responsible for firing appears next to the indicator (FA FPF or MTR FPF).

(3) The target number of priority targets allocated to a platoon appears in the box preceded by the target, followed by the target number (MORT PRI TGT CA3014).

(4) If the company FSO is responsible for initiating specific fires, the target number, group, or series designation is listed in the box for the FSO (CA3012). Specific guidelines concerning fires not included on the target list are included in that box.

(5) Alternate element responsible for the execution of specific fires is listed in the lower right hand corner of the box (2d platoon). If fires have not been initiated when they were supposed to have been, that unit initiates them (unless ordered not to).

(6) Each fire support measure to be placed in effect, followed by a word designated for the measure, is shown in the box (CFL CHUCK). For airspace coordination areas, the time for the arrival of the planned CAS or attack helicopters is listed (ACA 1400Z).

(7) Other factors that apply to a certain platoon during a specific time may be included in the appropriate box. General guidance is issued in the written portion of the operation order.

	AA	LD	CP7	OBJ GREEN
FSO	INITIAL PREP 1ST PLT	FIRE CA 3012 CFL CHUCK 2D PLT	FIRE CA GROUP 3D PLT	ACA (CAS) 1400Z
1ST PLT	FA FPF	CFL CHUCK		MORTAR FPF
2D PLT	FA FPF	MORT PRI TGT CA 3014 CFL CHUCK		FA FPF
3D PLT	MORTAR FPF	CFL CHUCK	MORT PRI TGT CA 3017 2D PLT	FA FPF

Figure 10-1. Example of company fire support execution matrix.

10-7. TARGETS

A target can be personnel, vehicles, materiel, or terrain that is designated and numbered for reference or firing. Every target can be classified as either a target of opportunity (appears during combat, no attack has been planned) or a planned target (fire is prearranged). Individually planned targets may be further subdivided into either scheduled or on-call targets. A scheduled target is a planned target to be attacked at a specified time. An on-call target is a planned target on which fire is delivered when requested.

a. A priority target is one that could decisively affect the unit mission. The brigade commander may allocate artillery priority targets to battalions. The battalion commander may in turn allocate priority targets to his subordinate companies (or platoons). Normally, the company commander designates company priority targets. Antiarmor platoon leaders will not likely designate priority targets; rather, they will assign responsibility for observation and execution to the antiarmor squads.

b. When the battalion commander designates priority targets, he provides specific guidance to the FSO and his subordinate companies as to when certain targets become priority targets, when they cease to be priority targets, the desired effects on the targets, and any special type of ammunition to be used. Firing units lay the guns on priority targets when they are not engaged in a fire mission, which reduces reaction time. FPF is an example of a priority target in a defensive situation.

c. The FSO assigns a target number to each planned target. Blocks of alphanumeric target numbers (two letters and four numbers) are provided for all fire-planning agencies. They serve as an index to all other information regarding a particular target, such as location, description, and size. The FSO may assign target numbers to unit TRPs. Mortar sections have blocks of target numbers so they can assign a target number when an observer directs "record as target" upon completion of a registration.

d. A standard target is an area about 200 meters in width. The symbol for a standard target is a cross. It may be canted if several targets are close to each other, or if the symbol might be mistaken as a grid intersection. The intersection of the lines marks the center of the target. The target list describes the target task, target type, and other pertinent information. (This applies to targets planned for conventional and improved conventional ammunition.)

(1) **Offensive Application.** Use offensive application targets to attack known, suspected, or likely enemy positions such as OPs, antitank sites, road intersections, or terrain that dominates attack axes.

(2) **Defensive Application.** Use defensive application targets to destroy the enemy as he attacks. Plan targets at fording sites, bridges, defiles restricting movement, road intersections, obstacles, and possible enemy overwatch and support-by-fire positions.

e. When the expected target will be moving, extra planning is required. Determine a trigger point that allows a designated observer sufficient time to initiate the call for fire, the firing unit time to prepare and fire, and the projectiles time to reach the target. The observer calls for fire as the unit or vehicles reach the trigger point and the enemy continues moving to the target. If timed properly, enemy and projectiles arrive at the target at the same time.

10-8. FINAL PROTECTIVE FIRES

Final protective fires are immediately available planned fires that block enemy movement, especially dismounted infantry approaching defensive lines or areas. These areas are integrated with defensive plans. The pattern of FPF plans may be varied to suit the tactical situation; they are drawn to scale on the target overlay. The dimension of an FPF is determined by the number and type of weapon used to fire on it (Figure 10-2). The company commander (or platoon leader) is responsible for the precise location of FPFs. The company commander, platoon leader, or FSO--

- Reports the desired location of the FPF to the supporting FDC.
- Adjusts indirect fire on the desired location, by weapon.
- Transmits the call to fire FPF to the supporting FDC.

The leader (normally the company commander or a platoon leader) in whose area the FPF is located has the authority to call for the FPF. The FPF has the highest priority of any target assigned to a fire support means. The FPF is only fired when required to repel the enemy's assault. Premature firing wastes ammunition and allows the enemy to avoid the impact area.

WEAPONS	SIZE (METERS)
60-mm Mortar (2 tubes).....	60 x 30
81-mm Mortar (4 tubes).....	100 x 35
105-mm Howitzer (6 guns).....	180 x 40
120-mm Mortar (2 tubes).....	120 x 60
120-mm Mortar (4 tubes).....	240 x 60
155-mm Howitzer (4 guns).....	200 x 50
155-mm Howitzer (6 guns).....	300 x 50
155-mm Howitzer (8 guns).....	400 x 50

Figure 10-2. FPF dimensions.

10-9. SPECIAL MUNITIONS

Special munitions may be used for illumination, which may be scheduled or on-call. Use friendly direct fire weapons and adjustment of indirect fires to illuminate areas of suspected enemy movement or to orient moving units.

a. Obscuration fires use smoke and white phosphorus ammunition to degrade the enemy by obscuring his view of the battlefield. (High explosive ammunition may also obscure his view with dust and fires, but the unit should not rely on it as the primary means.) Because smoke is subject to changes in wind direction and terrain contours, its use must be coordinated with other friendly units affected by the operation. Used properly, obscuration fires can--

- Slow enemy vehicles to blackout speeds.
- Obscure the vision of enemy direct fire weapon crews.
- Reduce accuracy of enemy-observed fires by obscuring OPs and CPs.
- Cause confusion and apprehension among enemy soldiers.
- Limit the effectiveness of the enemy's visual command and control signals.

b. Screening fires are closely related to obscuration fires; they also involve the use of smoke and WP. However, screening fires mask friendly maneuver elements to disguise the nature of their operations. For example, they are used to screen river crossings for an enveloping force. Screening fires may assist in consolidating on an objective by placing smoke in areas beyond the objective. They also may be used to deceive the enemy into believing that a unit is maneuvering when it is not. Screening fires require the same precautions as obscuration fires.

10-10. OBSERVER POSITIONS

To ensure indirect fire can be called on a specific target, observers must be designated and in the proper position. As the company plans indirect fire targets to support the operation and passes these down to the platoon, specific observers are positioned to observe the target and the associated trigger line or TRP. Any soldier can perform this function as long as he understands the mission and has the communications capability and training.

a. Once the target has been passed to the platoon or included by the platoon in the fire support plan, the platoon leader must position the observer and make sure he understands the following in precise terms:

- (1) The nature and description of the target he is expected to engage.
- (2) The terminal effects required (destroy, delay, disrupt, suppress, and so on) and purpose.
- (3) The communications means, radio net, call signs, and FDC to be called.
- (4) When or under what circumstances targets are to be engaged.
- (5) The relative priority of targets.
- (6) The method of engagement and method of control to be used in the call for fire.

(a) *Method of Engagement (Adjust Fire or Fire for Effect)*. Anticipate the need to adjust fires when deriving target location strictly through map-spot procedures. Using this technique, expect target location errors of up to 500 meters. Employ fire for effect when the target can be precisely located through previous adjustment, target area survey, or the use of laser range finders from known locations. When fires must be adjusted, consider the additional time required to complete the fire mission (two to four minutes for each adjustment) in the planning process.

(b) *Method of Control (Time on Target, At My Command, or When Ready)*. The method of control should reflect the degree of synchronization required. While time-on-target controls the precise timing of fires, it reduces flexibility in the firing units and can result in fewer missions being fired over a given period of time.

b. If the observer cannot be positioned to see the target and trigger line or TRP under the visibility conditions expected at the time the target is to be fired, the headquarters that planned the target must be notified and a new target must be planned at a location that will meet the commander's purpose for fire support.

10-11. REHEARSAL AND EXECUTION

Once the company commander (or platoon leader) has developed and coordinated the fire support plan, the unit should rehearse the plan. As the unit rehearses the maneuver, it rehearses the fire plan. The target list is executed as the maneuver is conducted; fires are requested (though not actually executed by the firing units) just as they would be during the operations. Under ideal circumstances, FPF can be adjusted during the rehearsal. Rehearsals on the terrain reveal any problems in visibility, communications, and coordination of the fire support plan. Conduct rehearsals under degraded conditions (at night and in mission-oriented protective posture (MOPP) 4 to make sure the unit can execute the plan in all circumstances.

a. If time or conditions do not permit full-scale rehearsals, key leaders can meet, preferably at a good vantage point, and brief back the plan. They can use a sand table depiction of the terrain. Each player explains what he does, where he does it, and how he plans to overcome key-leader casualties. The fire support plan execution is integral to this process and is rehearsed in exactly the same way.

b. The unit executes the fire plan as it conducts the operation. It calls for fires on targets as required and makes adjustments based on enemy reactions. Priority targets are cancelled as friendly units pass them or they become irrelevant to the maneuver.

10-12. COMMUNICATIONS

The FSO can monitor three of four possible radio nets. The company's mission and priority determine the specific nets.

a. **Company Command Net FM (Voice).** Platoon leaders, the XO, and attachments use this net to send reports, receive instructions, and request fires. Any fire supporters attached to the company monitor this net. The company headquarters is the net control station (NCS).

b. **Battalion Mortar Fire Direction Net FM (Voice).** Observers may use this net to request fires of the battalion mortar platoon. Other stations on the net include the company's fire support team (FIST) (if attached) and the battalion FSE. The battalion mortar platoon is the NCS.

c. **Field Artillery Fire Direction Net FM (Voice).** This net is used for field artillery (FA) fire direction. The FIST headquarters may digitally forward calls for fire from its observers on this net. The direct support battalion FDC is the NCS. When an FSO or FO is present, he uses this net to request FA fires. The battery FDC and battalion FSE are also on this net.

10-13. INDIRECT FIRES IN CLOSE SUPPORT

Effective indirect fire support often requires artillery and mortar fires near friendly infantry soldiers. These close supporting fires are most commonly FPFs in a defensive operation and are suppression or obscuration fires to support an assault on an enemy position. A safe integration of fires and maneuver this close demands careful planning, coordination, and knowledge of the supporting weapons.

a. **The Effect Required.** In the defense, this may be to destroy enemy soldiers and to degrade the effectiveness of enemy vehicles by causing them to fight buttoned-up. In the attack, the suppression and obscuration of enemy positions to allow the breach and seizure of a foothold on the objective is probably the desired effect.

b. **The Accuracy of the Delivery System.** There are many variables that impact on the accuracy of the weapon. The FSO has the technical knowledge to assist the commander. Artillery and mortars are area weapons systems, which means that every round fired from the same tube impacts in an area around the target or aiming point. This dispersion is greater in length than in width. The weather conditions (wind, temperature, and humidity), the condition of the weapon, and the proficiency of the crew also affect the accuracy.

c. **The Protection of his Unit as the Rounds are Impacting.** If in well-prepared defensive positions with overhead cover, an FPF can be adjusted very close, just beyond bursting range. If required, the company commander can even call for artillery fires right on his company position using proximity or time fuses for airbursts. It is much more dangerous to call for close indirect fires during an attack. The commander considers the terrain, the breach site, and the enemy positions to determine how close to adjust his supporting indirect fires.

d. **The Integration of Indirect Suppressive Fires.** When integrating indirect suppressive fires to support the breach and assault, the following points are key:

(1) The danger increases with the size of the weapons. Use artillery to isolate the objective, use the battalion's mortars on enemy positions away from the breach site, and

use infantry rifle company mortars (if available), M203s, and direct fire weapons for close suppression.

(2) Assaulting perpendicular to the gun-target line increases the probability of safety. If the rounds are coming over the head of the assault element, the margin of safety is reduced.

(3) Light infantry company mortars firing direct lay or direct alignment are the most responsive system when available. The section is able to observe the rounds' impact and adjust accordingly. The safest method is firing the 60-mm mortar with bipods.

(4) Ideally, the firing units register prior to firing close-support missions. If not, the first rounds fired may be off target by a considerable distance. Once the firing units are adjusted on a target, shifts from that target are much more reliable.

e. **Timings and Control.** The final requirement for integrating these fires is to establish timings and control to ensure these targets are initiated, adjusted, and shifted properly. If possible, the FSO (or antiarmor platoon leader) should locate where he can observe these targets (possibly with the support element). A detailed execution matrix should be developed that assigns responsibility for each target to the leader or observer who is in the best position to control it. These soldiers must know when each target, series, or group is fired, what effect is desired on which enemy positions, and when to lift or shift the fires. Consider the use of pyrotechnic or other signals to ensure communication.

10-14. FIRE SUPPORT TEAM

The following paragraphs examine capabilities, procedures, and other considerations that affect the company fire support team and its employment in the fire support mission.

a. **Personnel.** Fire support team (FIST) personnel include the company FSO, the fire support sergeant, a fire support specialist, and a radiotelephone operator.

b. **FIST Employment.** The antiarmor company commander has two options for employment of the FIST (when it is available):

(1) **Option 1.** The company FSO works out of his vehicle, which he positions where he can most effectively observe and control execution of the fire support plan. The FSO establishes OPs that take maximum advantage of the capability of the G/VLLD (if attached) to create lethal, accurate fires. He communicates with the commander on the company command net. This option allows the FSO to maintain effective control of any designated observers and to conduct required fire support coordination. He must keep the company informed at all times of his location and the routes he will take when moving from OP to OP.

(2) **Option 2.** The element is used as a combat observation lasing team (COLT) somewhere within the battalion or brigade sector or zone and is controlled by another headquarters. The company FSO, accompanied by the fire support specialist, moves with the company commander. He brings two radios and the handheld terminal unit (HTU).

10-15. CLOSE AIR SUPPORT

The brigade or battalion supplies the company or platoon with air support in the form of close air support and attack helicopters. All services can provide close air support (CAS) to the unit. CAS missions are flown against hostile targets near friendly forces. The forward air controller (FAC) is the battalion commander's expert in planning, requesting,

and executing CAS missions. (The Air Force liaison officer (ALO) is the SBCT commander's expert.) The FAC serves as a link between the maneuver element and the attacking aircraft. The company may provide information that the FAC or tactical air control party (TACP) uses to target enemy forces. Soldiers may provide emergency control if an FAC, FSO, or forward observer (FO) is not available (the brigade or battalion commander accepts responsibility for friendly casualties). This is possible only with aircraft equipped with FM radios. Most U.S. Air Force, Navy, and Marine Corp fixed-wing aircraft only have UHF radios (A/OA-10, F16, AV-8B, F-14, F/A-18, and AC-130). For additional information, see FM 3-09.3 (6-30). The company may also provide information on battle damage as observed. Figure 10-3 shows the format for assessing and reporting battle damage.

<p>Successful or unsuccessful. Target coordinates. Time on target. Number and type destroyed. Number and type damaged. Killed by air. Wounded by air. Dud bombs.</p>

Figure 10- 3. Format for battle damage assessment.

a. **AC-130 Gunship.** If the enemy air defense is low, the brigade or battalion requests CAS from an AC-130 gunship. The AC-130 provides effective fires during day and night operations and flies CAS and special operations. The aircraft contains one 40-mm gun, two 20-mm guns, two 7.62-mm miniguns, and one 105-mm howitzer. It is equipped with sensors and target acquisition systems that include forward-looking infrared radar (FLIR) and low-light television.

b. **Marking Friendly Positions.** Whenever possible, friendly positions are marked to enhance safety and to provide target area references. Methods of marking friendly positions are shown in Table 10-6, pages 10-20 and 10-21.

METHOD	DAY/ NIGHT	ASSETS	FRIENDLY MARKS	TARGET MARKS	REMARKS
SMOKE	D/N	ALL	GOOD	GOOD	Easily identifiable, may compromise friendly position, obscure target, or warn of fire support employment. Placement may be difficult due to structures.
SMOKE (IR)	D/N	ALL/ NVD AT NIGHT	GOOD	GOOD	Easily identifiable, may compromise friendly position, obscure target, or warn of fire support employment. Placement may be difficult due to structures. Night marking is greatly enhanced by the use of IR reflective smoke
ILLUM. GROUND BURST	D/N	ALL	N/A	GOOD	Easily identified, may wash out NVDs.
SIGNAL MIRROR	D	ALL	GOOD	N/A	Avoids compromise of friendly location. Dependent on weather and available light and may be lost in reflections from other reflective surfaces (windshields, windows, water, etc.)
SPOT LIGHT	N	ALL	GOOD	MARGINAL	Highly visible to all. Compromises friendly position and warns of fire support employment. Effectiveness is dependent upon degree of urban lighting.
IR SPOT LIGHT	N	ALL NVD	GOOD	MARGINAL	Visible to all with NVGs. Less likely to compromise than overt light. Effectiveness dependent upon degree of urban lighting.
IR LASER POINTER (below .4 watts)	N	ALL NVG	GOOD	MARGINAL	Effectiveness dependent upon degree of urban lighting.
IR LASER POINTER (above .4 watts)	N	ALL NVD	GOOD	GOOD	Less affected by ambient light and weather conditions. Highly effective under all but the most highly lit or worst weather conditions. IZLID-2 is the current example.
VISUAL LASER	N	ALL	GOOD	MARGINAL	Highly visible to all. Risk of compromise is high. Effectiveness dependant upon degree of urban lighting.
LASER DESIG- NATOR	D/N	PGM OR LST EQUIPED	N/A	GOOD	Highly effective with PGM. Very restrictive laser acquisition cone and requires line of sight to target. May require pre-coordination of laser codes
TRACERS	D/N	ALL	N/A	MARGINAL	May compromise position. May be difficult to distinguish mark from other gunfire. During daytime use, may be more effective to kick up dust surrounding target.
ELEC- TRONIC BEACON	D/N	SEE REMARKS	EXCELLENT	GOOD	Ideal friendly marking device for AC-130 and some USAF fixed wing (not compatible with Navy or Marine aircraft). Least impeded by urban terrain. Can be used as a TRP for target identification. Coordination with aircrews essential to ensure equipment and training compatibility.
STROBE (OVERT)	N	ALL	MARGINAL	N/A	Visible by all. Effectiveness dependent upon degree of urban lighting.
STROBE (IR)	N	ALL NVD	GOOD	N/A	Visible to all NVDs. Effectiveness dependent upon degree of urban lighting. Coded strobes aid in acquisition

Table 10-6. Methods of marking friendly positions.

METHOD	DAY/ NIGHT	ASSETS	FRIENDLY MARKS	TARGET MARKS	REMARKS
FLARE (OVERT)	D/N	ALL	GOOD	N/A	Visible by all. Easily identified by aircrew.
FLARE (IR)	N	ALL NVD	GOOD	N/A	Visible to all NVDs. Easily identified by aircrew.
GLINT/IR PANEL	N	ALL NVD	GOOD	N/A	Not readily detectable by enemy. Very effective except in highly lit areas.
COMBAT IDENTIFI- CATION PANEL	D/N	ALL FLIR	GOOD	N/A	Provides temperature contrast on vehicles or building. May be obscured by urban terrain.
VS-17 PANEL	D	ALL	MARGINAL	N/A	Only visible during daylight. Easily obscured by structures.
CHEMICAL HEAT SOURCES	D/N	ALL FLIR	POOR	N/A	Easily masked by urban structures and lost in thermal clutter. Difficult to acquire, can be effective when used to contrast cold background or when a/c knows general location.
SPINNING CHEM- LIGHT (OVERT)	N	ALL	MARGINAL	N/A	Provides unique signature. May be obscured by structures. Provides a distinct signature easily recognized. Effectiveness dependent upon degree of urban lighting.
SPINNING CHEM- LIGHT (IR)	N	ALL NVD	MARGINAL	N/A	Provides unique signature. May be obscured by structures. Effectiveness dependent upon degree of urban lighting.

Table 10-6. Methods of marking friendly positions (continued).

10-16. ATTACK HELICOPTERS

The primary mission of attack helicopter units is to destroy armor and mechanized forces. Employing attack helicopters in combined arms operations increases the lethality of ground maneuver forces.

a. **Aircraft Characteristics.** The AH-64A Apache, the AH-64D Longbow Apache, the OH-58D Kiowa Warrior, and the AH-1W or AH-1Z (USMC) are employed in attack operations. Table 10-7 provides a comparison of the weapon systems and armaments on these attack helicopters. (The table also lists weaponry for the AH-1 Cobra, which is no longer in the active Army inventory but might be used to provide attack support in joint operations with US Marine units.)

AIRCRAFT TYPE	WEAPON SYSTEMS						
	Hellfire/TOW ¹		Air-to-Air Stinger	2.75-inch (70-mm) Rockets	Cal .50 MG (rds)	20-mm Cannon (rds)	30-mm Chain Gun (rds)
AH-1 ²		8		76		750	
AH-64A ³	16			76			1,200
AH-64D ³	⁴ 16		4	76			1,200
OH-58D ^{2,3}	4		4	14	500		
AH-1W/Z ⁵							
Weapons Range (Max)	8 km	3,750 m	5+ km	8 km	2 km	2 km	4 km
Numbers in each column indicate the maximum load for each system.							
¹ The AH-1 uses the TOW missile as its armor engagement weapon instead of the Hellfire missile.							
² This aircraft carries one weapon system on each side (Hellfire, TOW, or both; air-to-air Stinger; and 2.75-inch rocket).							
³ Aircraft has a laser for target designation and an ATHS.							
⁴ Hellfire/Hellfire II.							
⁵ USMC helicopters will have varied weapon loads. During coordination, request on-board weapon status.							

Table 10-7. Helicopter weapon systems.

b. **Close Combat Attack.** The close combat attack technique does not replace the integrated decision-making process between ground maneuver and aviation elements. It is a technique for directing lethal fires within the context of a preplanned mission.

(1) To request immediate close combat attack, the ground unit in contact executes a face-to-face coordination or uses a radio transmission to provide a situation update to the attack aircraft (METT-TC permitting). This situation update contains essential elements from the aviation close combat attack coordination checklist (Figure 10-4).

(2) After receipt of a request for immediate close combat attack, the attack team leader informs the ground unit leader of the battle position, attack-by-fire position, or the series of positions his team will occupy that will provide the best observation and fields of fire into the engagement or target area. The attack team leader then provides the ground maneuver unit leader with his concept for the team's attack on the objective.

(3) Upon mission completion, the attack team leader provides the ground maneuver commander a battle damage assessment (BDA) of the intended target.

CLOSE COMBAT ATTACK CHECKLIST

1. Enemy situation--specific target identification.
2. Friendly situation--location and method of marking friendly positions.
3. Ground maneuver mission/scheme of maneuver.
4. Attack aircraft scheme of maneuver.
5. Planned engagement area and BP/SBF position.
6. Method of target marking.
7. Fire coordination and fire restrictions.
8. Map graphics update.
9. Request for immediate aviation close fight support--used for targets of opportunity or for ground-to-air target handoff.

Figure 10-4. Close combat attack coordination checklist.

Section III. INTELLIGENCE

Intelligence (or knowledge) impacts directly on the effects of maneuver, firepower, protection, leadership, and information--the elements of combat power. It provides the information necessary to select when, where, and how to employ maneuver and firepower. Additionally, accurate intelligence provides the commander the necessary information to select appropriate protective measures essential to the security of the command.

10-17. INTELLIGENCE ASSETS.

The company (or platoon) may conduct operations with any of several types of intelligence assets. In stability and support operations, for example, interrogation or counterintelligence teams may work in DS of the company. While conducting security operations, the team may receive attached intelligence assets, such as ground surveillance radar (GSR) or improved remotely monitored battlefield sensor system (IREMBASS) teams. In most situations, however, attachment of intelligence assets to the company will be rare. More commonly, these assets will be operating in or near the company's area of operations; they will be attached to or in DS or GS of the battalion, brigade, or division.

10-18. INTELLIGENCE COORDINATION

The company (or platoon) should be prepared to take advantage of information from these assets. It may also be tasked to provide a degree of tactical and or logistical support, especially area medical support coverage, for the intelligence elements. In situations in which the company (or platoon) works with or supports intelligence assets, leaders of each element share responsibility for conducting coordination early in the operation. Coordination commonly includes exchanging call signs and frequencies, conducting fratricide prevention activities, and sharing basic operational plans, fire support plans, and fire control measures.

Section IV. MANEUVER SUPPORT

The antiarmor company (or platoon) may receive support from the engineer platoon supporting the battalion or from the assigned engineer company in the SBCT. The company may also receive support from air defense and nuclear, biological and chemical reconnaissance, smoke, and decontamination units supporting the higher headquarters.

10-19. ENGINEERS.

Engineer support will normally be limited to supporting mobility, countermobility, and survivability tasks due to the austere assets available to the company (or platoon). Sustainment engineering support is furnished from corps engineers or combat heavy (construction) engineer units that are task-organized to support the light infantry brigade or the SBCT. Engineer support to contingency operations is based on METT-TC analysis.

10-20. MOBILITY

At the tactical level, overmatching mobility is critical to the success of the force. Within this context, the emphasis of engineer integration across the force is on mobility operations. Due to the full-spectrum capability of the company and the increasingly nonlinear, asymmetric nature of the enemy, the potential exists for the company to encounter a wide variety of existing and reinforcing obstacles. To counter this potential threat, the company commander plans, organizes, and prepares to perform mounted and dismounted mobility tasks using the full range of organic and augmentation mobility assets.

a. **Breaching Operations.** Engineers reduce obstacles as part of company breaching operations (Table 10-8, page 10-24) and must be prepared to perform mounted and dismounted reduction tasks using manual, mechanical, and explosive reduction means. (See FM 3-34.2) Through reverse breach planning, the supporting engineer identifies critical mobility tasks, allocates reduction assets, and recommends a breaching task organization to the company commander. Keys to allocating reduction assets include identifying all reduction tasks within the zone or axis, matching specific reduction assets to each task, and planning 50 percent redundancy in reduction assets for each task. The breach force must have the capability to secure the breach site locally; therefore, an engineer-based breach force must be task-organized with adequate maneuver combat power to suppress enemy forces in the vicinity of the breach site. The assault force must have the capability to exploit the breach and continue the attack. The following are keys to synchronizing a breach through reverse planning:

- Actions on the objective drive the size of the assault force.
- The size of the assault force determines the number and types of breach lanes required.
- The number and types of breach lanes determine composition of the breach force.
- Suppression and obscuration required drives the size and composition of the support force.

BREACHING TENETS	BREACHING FUNDAMENTALS	BREACHING ORGANIZATION	TYPES OF BREACHING OPERATIONS
Intelligence	Suppress	Assault Force	Assault
Breaching Fundamentals	Obscure	Breach Force	Covert
Breaching Organization	Secure	Support Force	In-Stride
Mass	Reduce		Deliberate
Synchronization	Assault		

Table 10-8. Key breaching doctrine.

During the breach planning process, it is imperative that the company commander establishes clear commitment criteria for the breach force. The commitment criteria should be as specific and measurable as possible so that they are clear, executable, and reportable. Sub-unit instructions or SOPs should likewise be clear and concise and should cover all potential actions and reactions. Leaders must position to quickly assess the success of the force in setting the prescribed conditions. To ensure success, all units must perform detailed combined-arms breach rehearsals whether mounted or dismounted.

b. **Route Clearance Operations.** The nature of operations makes route clearance a likely task at all levels. Route clearance is a combined-arms operation normally assigned to an infantry battalion or company that is task-organized with engineers and other CS and CSS assets as required. As such, it requires the detailed integration and synchronization found in typical breaching operations. (For a detailed discussion of route clearance operations, refer to FMs 5-7-30, 20-32, and 5-71-2.)

c. **Mobility Planning in the Defense.** Mobility operations in the defense ensure the ability to reposition forces, delay, and counterattack. Because of the mobile, offensive nature of the force, mobility planning is a key component of any defensive scheme of maneuver. The commander analyzes the scheme of maneuver, obstacle plan, and terrain to determine mobility requirements. Critical considerations may include--

- Lanes and gaps in the obstacle plan.
- Lane closure plan and sub-unit responsibility.
- Route reconnaissance, improvement, and maintenance.

10-21. COUNTERMOBILITY

Due to the austere engineer force structure, the brigade or battalion engineer performs the majority of obstacle planning and provides detailed integration and resourcing information to the companies (or platoons) in the higher unit's OPORD. He plans obstacles for both offensive and defensive operations. In either situation, the engineer uses obstacles to develop engagement areas, protect friendly vulnerabilities, and

counteract enemy reactions to friendly maneuver. Because of the mobile nature of the force and the inherently asymmetric, nonlinear environment in which it operates, the engineer relies primarily on scatterable, remotely delivered minefield systems to shape the battlefield. To the infantry company, this normally means integrating ground Volcano and MOPMS into the obstacle plan. The SBCT or battalion engineer designs and resources tactical obstacle groups, which companies integrate with direct and indirect fires and construct with engineer support. Obstacle groups consist of one or more individual obstacles that when integrated with direct and indirect fires achieve a specific effect (disrupt, fix, block, or turn). The obstacle plan must support the scheme of maneuver, maximize subordinate flexibility, and facilitate future operations.

a. **Obstacle Planning Process.** The obstacle planning process is an integral part of developing both offensive and defensive COAs. It correlates directly with sub-unit maneuver and positioning, engagement area development, and enemy actions. It includes these key components:

- Direct and indirect fires analysis.
- Obstacle intent integration (target, effect, relative location).
- Method of emplacement (conventional or scatterable).
- Obstacle effect priority.
- Mobility requirements.
- Obstacle design and resourcing.
- Marking and reporting obstacle locations.

b. **Barrier Material Resupply.** The higher unit S4 normally determines the method (in position or “tailgate”, out of position or “service station”, or supply point) and location for performing Class IV and V resupply during the MDMP. He provides resource quantities and tentative resupply node (Class IV and V point and mine dump) locations to companies in the OPORD. The company commanders then analyze resources and mine dump locations based on physical reconnaissance of their AO. The commander submits the results of this assessment to the S4 for adjustment as early as possible.

c. **Mine Dump Operations.** Mine dumps normally contain resources for a single obstacle group but may contain resources for individual obstacles if the distances between obstacles in a group are excessive and would potentially waste an inordinate amount of transportation time. The company commander, in coordination with the supporting engineer, locates the mine dump(s) where it best supports obstacle construction within the AO. If a company is assigned more than one obstacle group, it may have more than one mine dump. In light of the austere engineer organization within the force, it is imperative that the companies provide leadership and manpower to operate the mine dump, allowing engineers to construct tactical obstacles more efficiently. This requires close coordination with the supporting engineer.

d. **Obstacle Intent.** Obstacle intent provides a simple framework for the commander to issue guidance and facilitates common understanding and coordination between maneuver and engineer forces. It is at the foundation of the obstacle integration process and includes three components: target, obstacle effect, and relative location.

(1) The *target* is the enemy force that the commander wants to affect with fires and tactical obstacles. The commander identifies the target in terms of size, type, echelon, avenue of approach, or any combination.

(2) The *obstacle effect* (see Chapter 5, Defense) describes how the commander wants to attack enemy maneuver with obstacles and fires. Tactical obstacles block, turn, fix, or disrupt the enemy. The obstacle effect drives integration by focusing the relationship between obstacles and direct and indirect fires.

(3) The *relative location* is where the commander wants the obstacle effect to occur against the targeted enemy force. Whenever possible, the commander identifies the location relative to the terrain and maneuver or fire control measures to initiate the obstacle integration process.

e. **Scatterable Mines.** Scatterable mines (SCATMINES) are remotely delivered or dispensed by aircraft, artillery, missile, or ground dispenser and are laid without pattern. All US SCATMINES have a limited active life and self-destruct after that life has expired. The duration of the active life varies with the type of delivery system and mine. SCATMINES provide the commander with a means to respond to a changing enemy situation with remotely delivered minefields. They enable the commander to emplace minefields rapidly in enemy-held territories, to close lanes in obstacles, and to emplace in other areas where it is difficult for engineers to emplace conventional minefields quickly.

(1) **SCATMINE Emplacement Authority.** The corps commander has emplacement authority for all scatterable minefields within the corps AO. He may delegate this authority to lower echelons according to the guidelines contained in Table 10-9.

SYSTEM CHARACTERISTICS	EMPLACEMENT AUTHORITY
Ground- or artillery-delivered, with SD time greater than 48 hours (long duration).	The corps commander may delegate emplacement authority to division level, which may further delegate to brigade level.
Ground- or artillery-delivered, with SD time of 48 hours or less (short duration)	The corps commander may delegate emplacement authority to division level, which may further delegate to brigade level (which may further delegate to battalion level).
Aircraft-delivered (Gator), regardless of SD time.	Emplacement authority is normally at corps, theater, or army command level, depending on who has air-tasking authority.
Helicopter-delivered (Volcano), regardless of SD time.	Emplacement authority is normally delegated no lower than the commander who has command authority over the emplacing aircraft.
MOPMS when used strictly for a protective minefield.	Emplacement authority is usually granted to the company or base commander. Commanders at higher levels restrict MOPMS use only as necessary to support their operations.

Table 10-9. Emplacement authority.

(2) **Scatterable Minefield Warning.** The executing unit sends a scatterable minefield warning (SCATMINWARN) to all affected units before, or immediately after, the emplacement of the minefield (Table 10-10). The SCATMINWARN should be disseminated over command nets at all levels to all units operating in the area of the minefield during current and future operations. Absolutely critical components of the SCATMINWARN include the cornerpoint locations, size of safety zone, and self-destruct time.

Line	Message
Alpha	Emplacing system
Bravo	AT (Yes or No)
Charlie	AP (Yes or No)
Delta	4 aim or corner points
Echo	Grid coordinates of aim points/corner points and size of the safety zone
Foxtrot	DTG of the life cycle

Table 10-10. SCATMINEWARN.

(3) SCATMINE Delivery Systems.

(a) *Area-Denial Artillery Munitions (Field Artillery Delivered)*. The wedge-shaped ADAM is a bounding-fragmentation mine that deploys up to seven tension-activated trip wires 6 meters away from the mine. After ground impact, trip wires are released and the mine is fully armed. The lethal casualty radius is between 6 and 10 meters.

(b) *Remote Antiarmor Mines (Field Artillery Delivered)*. The RAAM mine has a cylindrical shape and provides a full-width or catastrophic kill. Using a magnetically influenced fuse, the mine projects a bi-directional, shaped-charge warhead through the crew compartment of a vehicle.

(c) *Multiple Delivery Mine System, or Volcano (Ground or Air Delivered)*. The Volcano is mounted on a cargo truck, UH-60A Blackhawk helicopter or an engineer squad vehicle (ESV). The Volcano dispenses mines with 4-hour, 48-hour, and 15-day self-destruct (SD) times. The SD times are field-selectable before dispensing and do not require a change or modification to the mine canister. Reload time (not including movement time to the reload site) for an experienced four-man crew is approximately 20 minutes. The average time to emplace one ground Volcano load (160 canisters) is 10 minutes.

(d) *Modular Pack Mine System (Man-Portable)*. The MOPMS is a man-portable, 162-pound, suitcase-shaped mine dispenser. The dispenser contains 21 mines (17 antitank ([AT] and 4 antipersonnel [AP])). When dispensed, an explosive propelling charge at the bottom of each tube expels mines through the container roof. Mines are propelled 35 meters from the container in a 180-degree semicircle. The safety zone around one container is 55 meters to the front and sides and 20 meters to the rear. Mines are dispensed on command using an M71 remote-control unit (RCU) or an electronic initiating device with firing wire. Once mines are dispensed, they cannot be recovered or reused. If mines are not dispensed, the container may be disarmed and recovered for later use. The RCU can recycle the 4-hour SD time of the mines three times, for a total duration of approximately 13 hours. The RCU can also self-destruct mines on command, allowing a unit to counterattack or withdraw through the minefield. The RCU can control up to 15 MOPMS containers or groups of MOPMS containers from a distance of 300 to 1,000 meters.

(e) *Raptor/Hornet (Man-Portable)*. The Raptor/Hornet wide area mine introduces an entirely new obstacle concept to the combined-arms team. The Raptor/Hornet is an integrated C2/top-attack special munition that type-categorizes, reports, and engages individual vehicles (Figure 10-5, page 10-28). The Raptor is a “smart” remote combat outpost that can provide the force with near-real-time situational understanding and can

command and control multiple Hornet mines in a fully integrated obstacle network. It can be programmed to command and control coordinated attacks with other Raptor-controlled minefields or with direct and indirect fire weapons systems. The Raptor/Hornet can be deactivated, allowing freedom of maneuver through the minefield while still providing near-real-time intelligence and situational understanding. The Raptor/Hornet has standoff detection and engagement capabilities. It attacks from the side or top at ranges up to 100 meters. The Raptor/Hornet--

- Can be a stand-alone tactical obstacle or can reinforce other conventional obstacles.
- Disrupts and delays the enemy, allowing long-range, precision weapons to engage more effectively. (This feature is particularly effective in non-LOS engagements.)
- Can communicate with its employing unit for remote on/off/on or program and battlespace intelligence reporting. The battlespace intelligence data may include target descriptions, numbers, and the direction and rate of movement. It can also provide an early warning of the enemy's activity.
- Can communicate with other munitions for conducting coordinated attacks.

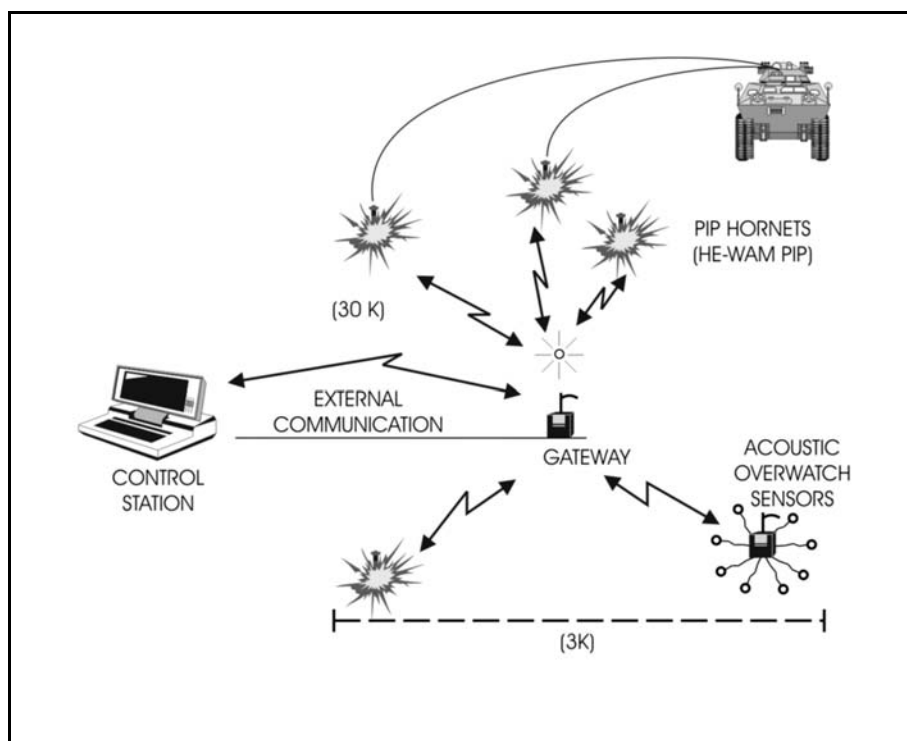


Figure 10-5. Raptor/Hornet concept.

(4) **SCATMINE Marking.** The emplacing unit is responsible for marking a scatterable minefield (Figure 10-6). This requires direct coordination between the owning maneuver unit and the delivering or emplacing unit. This requirement specifically applies to MOPMS, Volcano (ground-delivered), and Raptor/Hornet minefields. Minefields should be marked on four sides if emplaced to the rear of any friendly unit, including

reconnaissance elements and other units that may require a rearward passage of lines (RPOL).

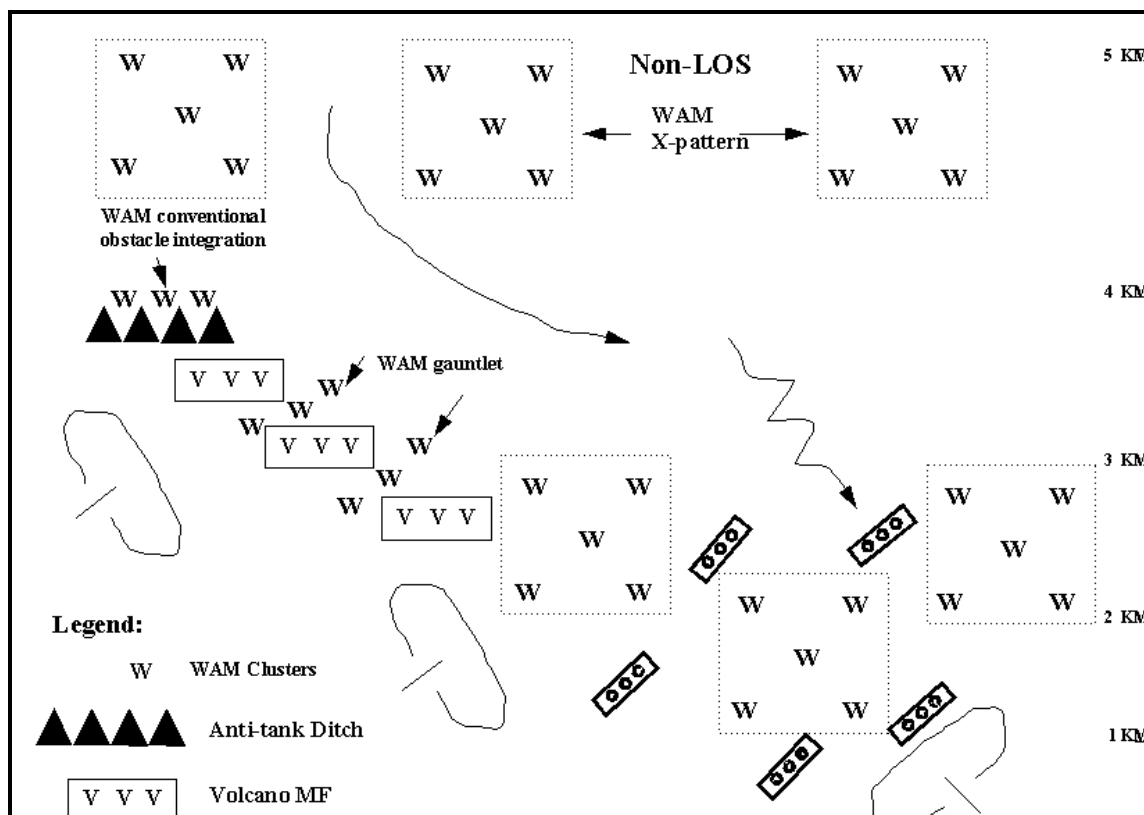


Figure 10-6. SCATMINE marking.

(a) *Safety Zones.* A safety zone is the area outside of the planned dimensions of a scatterable minefield where mines may land and activate. The commander must prevent friendly forces from maneuvering into the safety zone during the minefield's life cycle. Depending on its specific location on the battlefield, the safety zone may be marked with a fence.

(b) *Fragment Hazard Zones.* If a scatterable antiarmor mine lands and activates on its side and self-destructs, the resulting detonation may cause the shaped-charge to travel along a horizontal trajectory. The maximum fragment hazard zone for all US SCATMINE systems is approximately 640 meters. However, the acceptable risk distance is 235 meters from the outer edges of the minefield's safety zone for troops in the open (Table 10-11, page 10-30).

System	Safety Zone	Fragment Hazard Zone
ADAM/RAAM	500 to 1,500 meters from aim point(s) (depends on delivery method)	235 meters from the outside dimensions of the safety zone
Gator	925 x 475 meters from aim point(s)	1,395 x 945 meters from aim point(s)
Ground Volcano	1,150 x 160 meters	235 meters from start and stop points and the center line
Air Volcano	1,915 x 200 meters	235 meters from start and stop points and the center line
MOPMS	See FM 20-32, Figures 3-15 through 3- 17, for specific placement.	235 meters from the outside dimensions of the safety zone

Table 10-11. Safety and fragment hazard zones.

10-22. SURVIVABILITY

Survivability operations protect the force. The company commander (or platoon leader) plans, prioritizes, and enforces the survivability effort. The plan should specify the following:

- Level of survivability for each sub-unit position.
- Priority of survivability support by specific unit, type of weapon system, or combination.
- Type of position to be dug for a unit or type of system.
- Sequence and time allocated for platoons to receive blade support.

Additional considerations for survivability planning include command and control of digging assets, site security, CSS (fuel, maintenance, and Class I), and movement times between BPs. The commander should start the survivability effort as soon as practical. He may employ blade assets to support systems such as mortars, C2, and key weapons before the bulk of his combat systems are ready for survivability support. The commander should establish a directed time to be ready for survivability (or a “not later than [NLT]” time) to prevent waste of blade time. Companies prepare their area for the arrival of the blades by marking vehicle positions, identifying leaders to supervise position construction, and designating guides for the blade movement between positions.

10-23. NBC SUPPORT

Nuclear, biological, and chemical assets within a battalion (or the SBCT) are limited; therefore, it is imperative that the company (platoon) practice the fundamentals of NBC defense, avoidance, protection, and decontamination in order to survive on a contaminated battlefield.

a. **NBC Reconnaissance Support.** The corps or divisional chemical company (or the NBC reconnaissance platoon organic to the RSTA squadron of the SBCT) provides reconnaissance support. The NBC reconnaissance platoon can locate, identify, and mark areas of contamination. Since NBC reconnaissance assets are limited, the company commander (or platoon leader) must plan for alternate means of conducting NBC reconnaissance.

b. **Decontamination Support.** Operational decontamination support is not available at the company level. For operational decontamination, the company (or platoon) must request support from the battalion decontamination team. Thorough decontamination operations require the support of an external decontamination platoon. The company (or

platoon) must request this support through the higher headquarters' S3 section. The contaminated unit will be tasked to augment the decontamination platoon during the conduct of thorough decontamination operations. (For a more detailed discussion of decontamination requirements, refer to FM 3-5.)

c. **Smoke Support.** Internal smoke capabilities consist of company mortars and smoke pots. Smoke pots are the commander's primary means of producing small-area screening smoke. An external smoke platoon is required for long-term, large-area obscuration. If attached, the smoke platoon has the capability of providing both hasty smoke and large-area smoke support for tactical operations in the main battle area.

d. **Preparedness.** Because of the capability of a growing number of nations to employ nuclear and chemical weapons and the apparent willingness of some nations to use them, the company must plan from the outset to fight in an NBC environment. The commander is responsible for preparing his unit to operate in an NBC environment. He does this by--

- Continuing normal operations but reducing his unit's vulnerability through terrain shielding and increased protective measures while positioning elements to accomplish the mission.
- Specifying a level of protection that will reduce the risk of mass casualties when faced with an NBC threat.

Section V. AIR DEFENSE ARTILLERY

Stinger man-portable air defense system (MANPADS) teams, Avengers, Bradley Linebackers, and Bradley Stinger Fighting Vehicles (BSFVs) may operate in and around the company AO in support of the battalion or brigade. It is unlikely that the antiarmor company will be task-organized with any of these air defense assets. Therefore, the company must conduct its own air defense operations, relying on disciplined passive air defense measures and the ability to actively engage aerial platforms with organic weapons systems.

10-24. SYSTEMS, ORGANIZATION, AND CAPABILITIES

The systems that may operate in and adjacent to the company AO are Stinger MANPADS and the Avenger, Linebacker, and BSFV (Table 10-12, page 10-32). The Avenger, BSFV and Linebacker systems can operate as Stinger MANPADS teams. The battalion is normally task-organized with an air defense platoon equipped with MANPADS- or Avenger-equipped units. Linebacker- or BSFV-equipped units may be present if the battalion (or SBCT) is fighting as part of a heavy organization. The company may have an air defense section moving with it; however, this section normally remains part of the air defense platoon, responsible for providing DS or GS coverage to higher units.




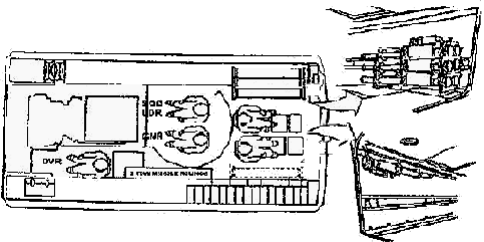
<p>Man-Portable System</p> 	<p>Personnel: 2-man crew Basic load: 6 missiles basic load w/ M998 HMMWV Acquisition/range: Visual Engagement range: 5 km Engagement altitude: 3 km + Mutual support: 2 km +</p>
<p>Avenger</p> 	<p>Personnel: 2 man crew Basic load: 8 ready-to-fire missiles, 250 rds .50 cal Acquisition/range: Visual/FLIR 9-10 km, laser range finder Engagement range: 5 km + Engagement altitude: 3 km + Mutual support: 3 km Emplacement time: 6 min, can remote operations out to 50 meters</p>
<p>Bradley Linebacker</p> 	<p>Personnel: 4-man crew Basic load: 10 missiles (4 ready to fire, 6 stowed) Acquisition/range: Visual/thermal Engagement range: 5 km (Stinger), 2500 m 25-mm, 900 m coax Engagement altitude: 3 km + Mutual support: 3 km Emplacement time: Fire on the move Reload time: 4 minutes</p>
<p>Bradley Stinger Fighting Vehicle</p> 	<p>Personnel: 5-man crew Basic load: 6 Stinger; 5 TOW, 900 25-mm (300 RTF) Acquisition/range: Visual/IR Engagement range: 5 km (Stinger), 3750 m (TOW), 2500 m 25-mm, 900 m coax Engagement altitude: 3 km + Mutual support: 3 km Emplacement time: 10 sec (hasty), 6 min (deliberate)</p>

Table 10-12. Air defense systems.

10-25. EMPLOYMENT OF AIR DEFENSE SYSTEMS

In offensive situations, AD elements accompany the main attack. They may maneuver with the brigade or battalion's lead company, orienting on low-altitude air avenues of approach. When the unit is moving or in a situation that entails short halts, the short range air defense (SHORAD) element positions its vehicles and MANPADS to assure mutual support between systems and coverage to the company. The Stinger gunners can dismount to provide air defense when the unit reaches the objective or pauses during the attack. In the defense, SHORAD units establish battle positions based on available information and the battalion and or brigade commander's scheme of maneuver. Squads are positioned approximately 2 kilometers apart to maximize the air defense vehicles' defensive capabilities.

10-26. WEAPONS CONTROL STATUS

The weapons control status (WCS) describes the relative degree of control in effect for air defense fires. It applies to all weapons systems. The weapons control status is dictated in the higher unit's OPOD and may be updated based on the situation. There are three levels of weapons control.

- a. **Weapons Free.** Crews can fire at any air target not positively identified as friendly. This is the least restrictive weapons control status level.
- b. **Weapons Tight.** Crews can fire only at air targets positively identified as hostile according to the prevailing hostile criteria.
- c. **Weapons Hold.** Crews are prohibited from firing except in self-defense or in response to a formal order. This is the most restrictive control status level.

10-27. EARLY WARNING PROCEDURES

Air defense warnings (ADWs) include--

- RED--Air or missile attack imminent or in progress.
- YELLOW--Air or missile attack probable.
- WHITE--Air or missile attack not likely.

While air defense warnings cover the probability of hostile air action over the entire theater of war or operations, local air defense warnings describe with certainty the air threat for a specific part of the battlefield. Air defense units use these local warnings to alert Army units to the state of the air threat in terms of "right here, right now." There are three local air defense warning levels:

- DYNAMITE--Air platforms are inbound or are attacking locally now.
- LOOKOUT--Air platforms are in the area of interest but are not threatening. They may be inbound, but there is time to react.
- SNOWMAN--No air platforms pose a threat at this time.

NOTE: The area air defense commander routinely issues air defense warnings for dissemination throughout the theater of war or operations. These warnings describe the general state of the probable air threat and apply to the entire area.

10-28. REACTION PROCEDURES

Reaction procedures include both passive and active air defense measures.

a. **Passive Air Defense.** Passive air defense consists of all measures taken to prevent the enemy from detecting or locating the unit, to minimize the target acquisition capability of enemy aircraft, and to limit damage to the unit if it comes under air attack. One advantage the company can exploit is that target detection and acquisition are difficult for crews of high-performance aircraft. In most cases, enemy pilots must be able to see and identify a target before they can launch an attack.

(1) **Guidelines.** The company (or platoon) should follow these guidelines to avoid detection or limit damage:

- When stopped, occupy positions that offer cover and concealment; dig in and camouflage vehicles that are exposed. When moving, use covered and concealed routes.
- Disperse vehicles as much as possible to make detection and attack more difficult.
- Wipe out track marks leading to vehicle positions and eliminate or cover the spoil from dug-in positions.
- If moving when an enemy aircraft attacks, disperse and seek covered and concealed positions.
- Do not fire on a hostile fixed-wing aircraft unless it is clear that the aircraft has identified friendly elements. Premature engagement compromises friendly positions.
- Designate air guards for every vehicle and position; establish and maintain 360-degree security.
- Establish an air warning system in the unit SOP, including both visual and audio signals.

(2) **Procedures.** When the company observes fixed-wing aircraft, helicopters, or UAVs that could influence its mission, it initially takes passive air defense measures unless the situation requires immediate active measures. This reaction normally takes the form of each platoon's React to Air Attack Battle Drill; however, the commander can initiate specific passive measures if necessary. Refer to the passive air defense guidelines for the company team discussed earlier in this section. Passive air defense involves these three steps:

- Step 1--Alert the unit with a contact report.
- Step 2--Deploy or take the appropriate actions. If the unit is not in the direct path of an attacking aircraft, the commander (or platoon leader) orders vehicles to seek cover and concealment and halt with at least a 100-meter interval between vehicles. The unit also may be ordered to continue moving as part of the higher organization.
- Step 3--Prepare to engage. Vehicle crews prepare to engage the aircraft with machine-gun or main-gun fire on order of the commander or their platoon leader.

NOTE: Passive air defense also includes the unit's preparations for conducting active air defense measures.

b. **Active Air Defense.** If the commander (or platoon leader) determines that the unit is in the direct path of attacking aircraft, he initiates active air defense procedures, including React to Air Attack drills by the subordinate units. Active air defense entails the following steps:

- Step 1--Initiate fires. The primary intent is to force aircraft to take self-defense measures that alter their attack profile and reduce their effectiveness. Leaders may use a tracer burst to designate an aim point for machine gun antiaircraft fires (Figure 10-7). Volume is the key to effectiveness; crew-served and individual weapons throw up a "wall of steel" through which aircraft must fly. Antiarmor weapon system employment (TOW and Javelin) provides effective air defense against hovering attack helicopters.
- Step 2--Create a nonlinear target. Vehicles move as fast as possible at a 45-degree angle away from the path of flight and toward attacking aircraft. Each platoon maintains an interval of at least 100 meters between vehicles, forcing aircraft to make several passes to engage the entire platoon.
- Step 3--Move quickly to covered and concealed positions and stop. Vehicles freeze their movement for at least 60 seconds after the last flight of aircraft has passed.
- Step 4--Send a spot report (SPOTREP). The company commander or XO (platoon leader or platoon sergeant) updates the higher commander on the situation as soon as possible.

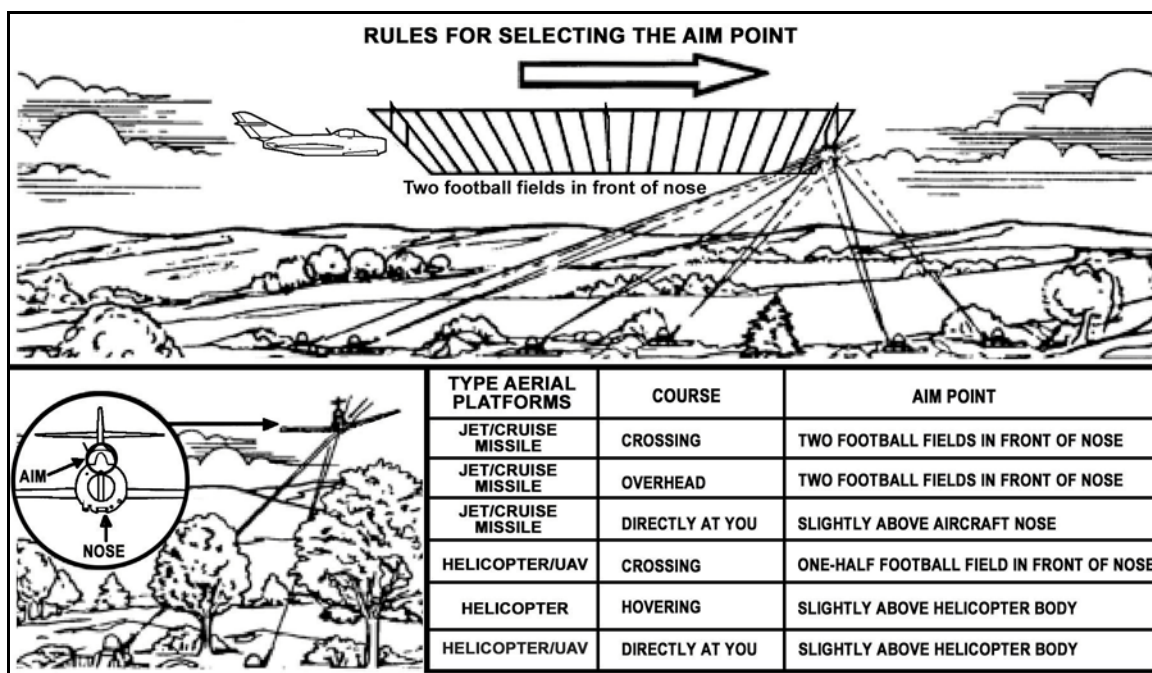


Figure 10-7. Machine gun aim points against helicopters and high-performance aircraft.

Section VI. COMBAT SUPPORT IN THE STRYKER BRIGADE COMBAT TEAM.

The SBCT and its battalions, squadron, or other supporting units provide the SBCT antiarmor company with combat support. Support can include fires from an infantry battalion mortar platoon or reconnaissance troop mortar section, or fires from field artillery, and tactical aircraft. The SBCT RSTA squadron and engineer company or the infantry battalion reconnaissance platoon may also support an antiarmor unit.

10-29. SBCT

The SBCT is a full-spectrum-capable combat brigade. The SBCT is organized with assigned unit-based capabilities--military intelligence, RSTA, engineer, artillery, and signal.

a. Reconnaissance, Surveillance, and Target Acquisition Squadron. The RSTA squadron answers the brigade commander's PIR, fills voids in information, and helps a commander to develop understanding within the area of operations by serving as a primary source of combat information. The squadron contains three reconnaissance troops, each of which includes Javelins and a 120-mm mortar section. The squadron's surveillance troop incorporates a UAV platoon, a multi-sensor platoon, signal intelligence and ground sensor, and an NBC reconnaissance platoon. The squadron can simultaneously reconnoiter nine routes or conduct surveillance of 18 named areas of interest on a continuous 24-hour cycle.

b. Field Artillery Battalion. The SBCT has an assigned field artillery battalion. Three batteries of M-198 towed 155-mm artillery provide the brigade with fire support. Each battery has four guns assigned for a total of 12 artillery pieces in the SBCT.

c. Engineer Company. The engineer company serves as the SBCT's primary means for mobility. Contingencies requiring survivability and construction will require the SBCT to be augmented with additional engineer assets. The company consists of three line platoons and one support platoon.

d. Military Intelligence Company. The military intelligence company (MICO) provides analysis and ISR analysis integration functions to support the development of the SBCT commander's common operational picture (COP), targeting and effects, and IPB. It operates as an extension of the SBCT S2 staff for the management of internal and external collection assets.

10-30. INFANTRY BATTALION

The antiarmor company may be attached or OPCON to an infantry battalion. The infantry battalion mortar platoon responds to support requests from the companies according to the battalion fire plan. The battalion reconnaissance platoon and snipers normally work directly for the battalion; however, at times they may operate in the antiarmor company's AO.

a. Battalion Mortars. The company receives supporting fires from the battalion mortars. The battalion order designates the priority of fires and allocates priority targets. The company commander considers his priority within the battalion plan. If he is first in priority, his calls for fire take precedence over all other battalion units. This may allow the commander to depend less on the field artillery battalion. Also, the company commander must understand the risks involved; for example, the priority of fires may

change. The infantry battalion commander should be aware that the antiarmor company has no assigned mortars, but has a fire support vehicle (FSV) equipped with a G/VLLD. If a priority target is allocated to the company, the company commander plans to employ it when and where it will be most useful to achieve the desired effects.

b. **Battalion Reconnaissance Platoon.** The battalion reconnaissance platoon is organized and equipped for reconnaissance--not to seize or retain terrain. Its primary missions are to reconnoiter and screen. When the reconnaissance platoon is operating near the antiarmor company, the commander may communicate with the platoon leader via FM, FBCB2, or he may use visual signals. Necessary signals and contact procedures are arranged between the antiarmor company commander and the reconnaissance platoon leader. If reconnaissance elements must pass through the company (or vice versa), contact points, passage points, passage lanes, guides, and procedures must be arranged. The reconnaissance platoon may be attached to the company for a counterreconnaissance mission. The reconnaissance teams serve as the commander's eyes and ears on the battlefield. They provide continuous battlefield information on operations; they should only use their organic weapons in self-defense.

c. **Battalion Snipers.** Snipers may operate in support of the antiarmor company for specific missions. They are most effective when tasked to destroy specific enemy targets and when allowed to operate with few restrictions.